ISSN (print) 0093-4666 © 2015. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/130.41

Volume 130, pp. 41–46 *January–March 2015*

Anungitea guangxiensis and *Ellisembia longchiensis,* two new species from southern China

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Abstract — Two new hyphomycete species, *Anungitea guangxiensis* and *Ellisembia longchiensis,* are described and illustrated from specimens collected on dead branches in southern China. *Anungitea guangxiensis* is characterized by conidiogenous cells that are polyblastic, integrated, terminal, smooth, and denticulate (with cylindrical denticles) and conidia produced in acropetal chains. *Ellisembia longchiensis* is characterized by distinct, single, unbranched, erect conidiophores, monoblastic conidiogenous cells, and distoseptate conidia that have a small, globose, mucilaginous apical sheath.

Key words — conidial fungi, taxonomy

Introduction

Anungitea was established by Sutton (1973) as a monotypic genus with *A. fragilis* B. Sutton as the type species. The genus is characterized by conidia borne on conspicuous denticulate loci of the terminal or intercalary conidiogenous cells and which form acropetal, unbranched chains. A further 19 names have been proposed in *Anungitea* (Castañeda 1986; Castañeda & Kendrick 1990, 1991; Castañeda et al. 1997; Crous et al. 1995, 2014; Kirk 1983; Matsushima 1975; Rambelli et al. 2008, 2009, 2010; Sutton & Hodges 1978), but subsequently *A. globosa* B. Sutton & Hodges was synonymised with *A. fragilis* (Kirk 1982; Matsushima 1987; Castañeda Ruíz et al. 1996), and *A. triseptata* R.F. Castañeda & W.B. Kendr. was transferred to *Anungitopsis* (Castañeda & Kendrick 1991).

The genus *Ellisembia* was introduced by Subramanian (1992) to accommodate *Sporidesmium*-like species with determinate or irregularly percurrently extending conidiogenous cells that produce distoseptate conidia. Wu & Zhuang (2005) merged *Imicles* Shoemaker & Hambl. (Shoemaker & Hambleton 2001) into *Ellisembia* and expanded the generic concept to include species that produce typically lageniform, ovoid, or doliiform percurrently extending conidiogenous cells.

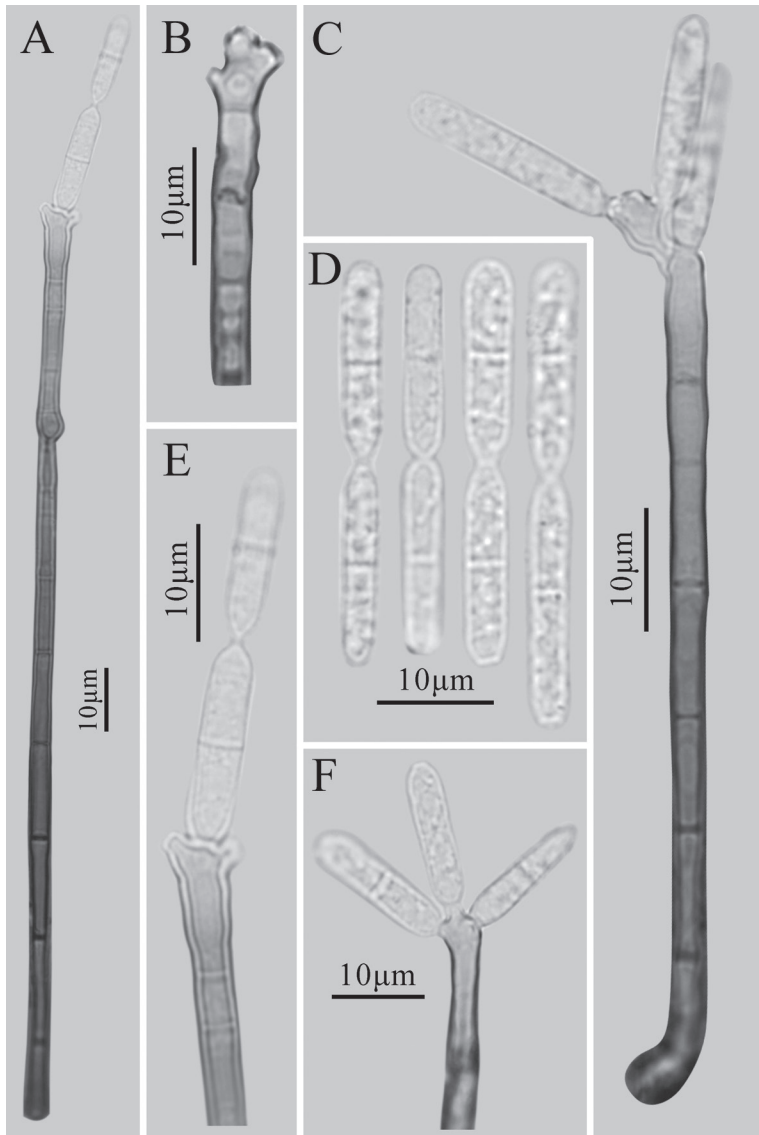

Fig. 1. *Anungitea guangxiensis* (holotype, HSAUP H6351).
A,C. Conidiophores with conidia. B. Apex of conidiophore.
D. Conidia. E,F. Apex of conidiophores with conidia.

Many taxa of hyphomycetes have been already described from China (Wu & Zhuang 2005, Zhang et al. 2009a,b, 2011, 2012, Ma et al. 2010, 2012a,b,c, Ren

et al. 2012). In our studies on hyphomycetes from deciduous stems and rotten wood in southern China, we collected two hyphomycetes that possess the morphological characteristics of *Anungitea* and *Ellisembia*. Both are proposed herein as new species.

Anungitea guangxiensis J.W. Xia & X.G. Zhang, **sp. nov.** Fig. 1

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Differs from *Anungitea heterospora* by its much larger conidia; and from *A. longicatenata* by its longer, cylindrical conidia.

Type: China, Guangxi Province: Mount Dayao, on dead stems of unidentified broad-leaved tree, 26 Oct 2012, J.W. Xia (**Holotype**, HSAUP H6351; **isotype**, HMAS 243458).

Etymology: in reference to the province where the type was found.

Colonies on natural substrate effuse, pale brown to brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of septate, pale brown, smooth, 1–2 µm wide hyphae. Conidiophores distinct, single, unbranched, erect, straight or slightly flexuous, cylindrical, smooth, thick-walled, pale brown to brown, 6–11-septate, 70–160 × 2.5–4.5 µm. Conidiogenous cells polyblastic, integrated, terminal, sympodial, hyaline to pale brown, 10–18 × 2.5–4.5 µm, with 1–6 short denticles. Conidia acrogenous, cylindrical, in unbranched acropetal chains, dry, subhyaline to hyaline, 1-septate, truncate at the base and rounded at the apex, 16–22 µm long, 3–4 µm wide.

Comments – Among the known species, *Anungitea guangxiensis* bears some resemblance to *A. heterospora* P.M. Kirk and *A. longicatenata* Matsush. in conidial shape. However, the primary conidia of *A. heterospora* are smaller (8–9.5 × 3–4 µm, 1-septate) than those of *A. guangxiensis* and occasionally slightly constricted at the septum (Kirk 1983). The conidia of *A. longicatenata* differ by being shorter (11–18 × 2.5–4 µm, 0–2-septate), narrowly obovoid to cylindrical, and tapering at both ends (Matsushima 1975).

Ellisembia longchiensis J.W. Xia & X.G. Zhang, **sp. nov.** Fig. 2

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Differs from *Ellisembia mucicola* by its longer, narrower, obclavate conidia with more numerous distosepta; and from *E. suttonii* by its longer, narrower conidia and its conidiogenous cells lacking percurrent proliferations.

Type: China, Sichuan Province: national forest park of Longchi, on dead stems of unidentified broad-leaved tree, 17 Apr 2012, J.W. Xia (**Holotype**, HSAUP H6246-1; **isotype**, HMAS 243459).

Etymology: in reference to the type locality.

Colonies on natural substrate effuse, pale brown to brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of septate, pale brown, smooth, 2–5 µm wide hyphae. Conidiophores distinct, single, erect,

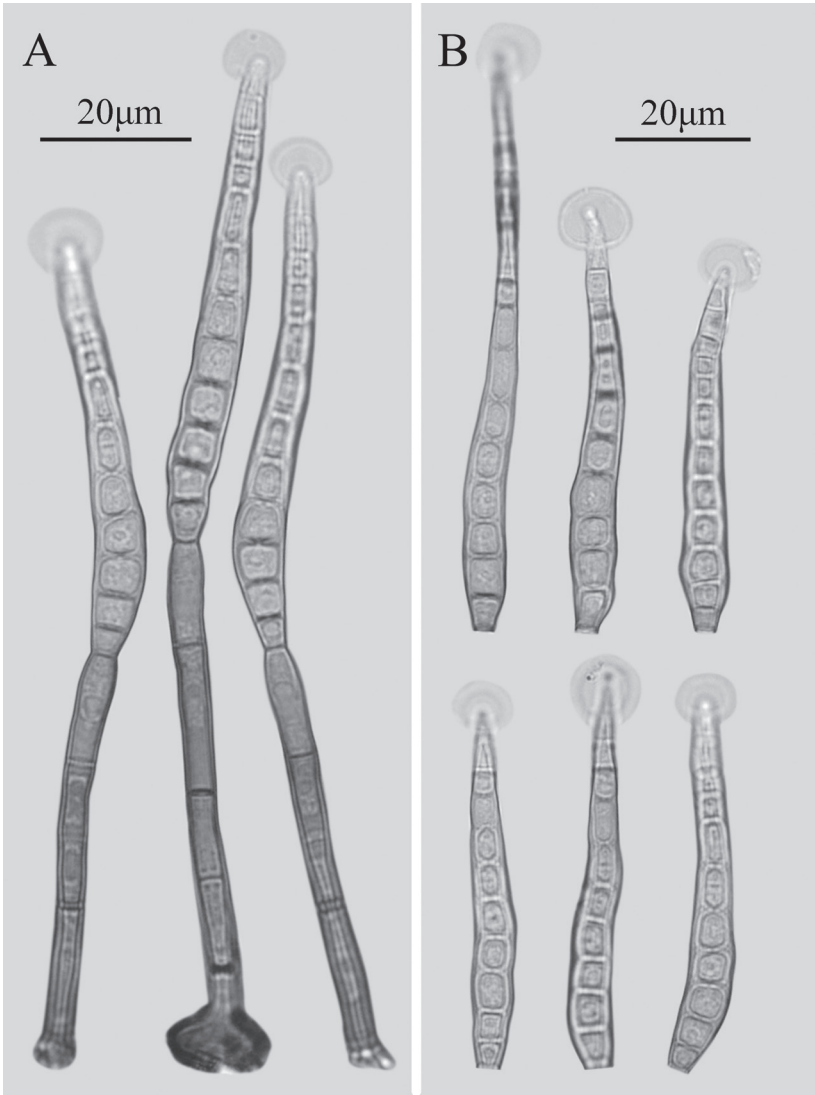

Fig. 2. *Ellisembia longchiensis* (holotype, HSAUP H6246-1).
A. Conidiophores with conidia. B. Conidia.

straight or slightly flexuous, cylindrical, smooth, thick-walled, pale brown to brown, 2–4-septate, 55–75 × 3.5–5 μm. Conidiogenous cells monoblastic, integrated, terminal, pale brown to brown, 13.5–15 × 3.5–5 μm. Conidial

secession schizolytic. Conidia holoblastic, solitary, acrogenous, straight or slightly curved, obclavate, smooth-walled, pale brown to brown, paler towards the apex where it is hyaline, 9–12-distoseptate, 55–86 µm long, 6–7 µm thick in the broadest part, 3–4.5 µm wide at the truncate base, with a small, globose, mucilaginous apical sheath.

Comments – *Ellisembia longchiensis* is closely related to *E. mucicola* W.P. Wu and *E. suttonii* W.P. Wu. *Ellisembia mucicola* differs by its shorter, wider, ellipsoid to fusiform conidia (42–52 × 2.5–4 µm, 8–9-septate); and *E. suttonii* differs by its shorter, wider conidia (45–52 × 9–12 µm, 10–12-septate) and its percurrently proliferating conidiogenous cells (Wu & Zhuang 2005).

Acknowledgments

The authors express gratitude to Dr. Eric H.C. McKenzie and Dr. Bryce Kendrick for serving as pre-submission reviewers and for their valuable comments and suggestions. This project was supported by the National Natural Science Foundation of China (Nos. 31093440, 31230001) and the Ministry of Science and Technology of the People's Republic of China (Nos. 2006FY120100).

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